REMARKS

Claim 1 is amended to more particularly point out that the claim is directed to Applicants' planar oxygen sensor, consistent with claims 2-18. The claim has been re-arranged with subparagraphs for purposes of clarity. Claim 1 is also amended to recite a temperature measurement device that includes first and second device terminals, which communicate with the first and second measuring leads of the ground plane, features originally recited in claims 2 and 3. Claim 2 is amended to avoid redundancy. Claim 19 is amended to point out that the temperature measuring device includes first and second device terminals that communicate with the measuring leads of the ground plane, as originally recited in claims 20 and 22, now cancelled.

Claim Rejection under 35 USC § 112

Claims 1-18 were rejected under35 USC § 112 as indefinite as being unclear with respect to the subject matter. Claim 1 is amended to clarify that the claim is directed to Applicants' planar oxygen sensor. The amendment makes clear that the claim is not in Jepson format. Therefore, it is requested that the rejection be withdrawn.

Claim Rejection under 35 USC § 102 and 103

Claims 1, 6-11, and 14-18 were rejected under 35 U.S.C. § 102(e) as unpatentable over United States Patent No. 6,638,416, issued to Wang et al. in 2003. Claims 2-5, 12-13 and 19-28 were rejected under 35 U.S.C. § 102(e) as unpatentable over Wang et al. in

view of United States Patent No. 4,417,470, issued to McCracken et al. in 1983, and United States Patent No. 5,562,811, issued to Lenfers in 1996. In view of the amendments to the independent claims, it is appropriate to discuss the rejections together.

Wang et al. is discloses a hydrogen sensor, as opposed to an oxygen sensor as in the present invention. Moreover, Wang et al. does not disclose a temperature measurement device having terminals connected to a ground plane, a key feature of Applicants' invention as brought out by the amendments to the claims. Thus, Wang et al. does not anticipate the present invention.

Applicants contend that Wang et al. is not a proper reference under Section 103. Wang et al. only qualifies as prior art under 35 U.S.C. § 102(e). Section 103 (c)(1) excludes such prior art where the subject matter of the reference and the claimed invention were, at the time of the claimed invention, owned by the same person or subject to an obligation of assignment to the same person. In this instance, all inventors named in the Wang et al. patent were under obligation to assign and have assigned the ownership to Delphi Technologies, Inc. Applicants were also under obligation to assign ownership at the time of the present invention, and have now assigned the ownership, to Delphi Technologies, Inc. It is noted that inventors Wang, Chen, and Symons of the Wang et al. patent are also inventors of the present application. Thus, the inventions were commonly owned at the time of the present invention, and the Wang et al. patent should be withdrawn as a reference under Section 103.

Even if considered, the rejection recognizes that Wang et al. does not show an oxygen sensor having a temperature sensing device , and so looks to the secondary references to make up the deficiency.

Applicants' invention is directed to an oxygen sensor that includes a ground plane and a temperature measurement device that is coupled to the ground plane. McCracken et al. shows a temperature sensor 120 in Fig. 3B for use in a well, col. 2, beginning at line 28. However, the temperature sensor in McCracken et al. does not measure oxygen, does not include ground plane in connection with the heating element of an oxygen sensor, and so cannot show coupling a temperature sensor device to such oxygen sensor ground plane, as in Applicants' invention.

Lenfers describes an oxygen probe wherein temperature is determined by measuring the resistance of one of the electrodes 16 or 30 that are used for measuring oxygen content. Applicants' oxygen sensor also includes electrodes (unnumbered in Fig. 1) for measuring resistance across pump cell 2 and reference cell 4. However, these electrodes a separate from the ground plane 10 and heating device 8, and have separate electrical connections. Nothing in Lenfers contemplates a ground plane interposed between the electrodes used in oxygen measurement and the heating element 44. Thus, Lenfers does not show Applicants' invention.

Therefore, even if combined with Wang et al., there is nothing in McCracken et al. or Lenfers that would point the practitioner to couple a temperature measurement device

to the ground plane in Wang et al. Rather, the practitioner is lead by the secondary references to use the techniques therein to measure temperature apart for any such ground plane.

Claim 1 is directed to Applicants' oxygen sensor that includes a pump cell, a reference cell, a sensor chamber and a heating device, elements common to oxygen sensors. The claim also calls out a ground plane and a temperature measurement device. In accordance with the claim, the first device terminal of the temperature measurement device is communicated with the first measuring lead of the ground plane, and the second device terminal of the temperature measurement device is communicated with the second measuring lead of the ground plane. The hydrogen sensor in Wang et al. includes a ground plane, but Wang et al. does not describe using the ground plane to measure temperature. McCracken et al. describes a temperature sensor, but does not contemplate an oxygen sensor and so suggest using the ground plane element for the elements disclosed therein. Lenfers does not provide a ground plane, and so cannot suggest measuring temperature using the ground plane, but rather points to measuring temperature using the electrodes in the pump and reference cells, and so teaches away from Applicants' invention. Thus, even if the references are combined, there is nothing to lead the practitioner to Applicants' invention as set forth in claim 1.

Claims 2-18 are dependent upon claim 1 and so are not taught or suggested by the references at least for the reasons set forth with regard to that claim.

Claim 19 is directed to Applicants' method for measuring temperature of a planar oxygen sensor that includes a ground plane as well as a pump cell, reference cell and heating device. The claim calls for communicating the first device terminal of the temperature measuring device with the first measuring lead of the ground terminal, and the second device terminal of the temperature measuring device with the second measuring lead of the ground terminal. As discussed above, the references do not suggest communicating the terminals of a temperature measuring device with the leads of the ground plane. Therefore, the references do not teach or suggest Applicants method in claim 19, or in claims 20-28 dependent thereon.

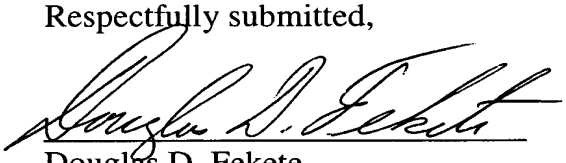
Accordingly, it is respectfully requested that the rejection of the claims based under Sections 102 or 103 be reconsidered and withdrawn, and that the claims be allowed.

Conclusion

It is believed, in view of the amendments and remarks herein, that all grounds of rejection of the claims have been addressed and overcome, and that all claims are in condition for allowance. If it would further prosecution of the application, the Examiner is urged to contact the undersigned at the phone number provided.

The Commissioner is hereby authorized to charge any fees associated with this communication to Deposit Account No. 50-0831.

Respectfully submitted,



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